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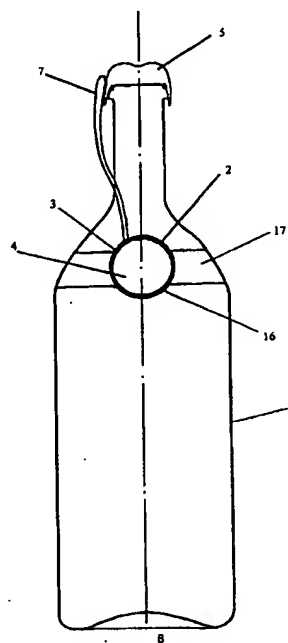
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(54) **CONTAINER**

(57) The invention relates to the packaging of liquids and can be used in the production of containers for bottling wines and spirits, sparkling wines, juice, in the perfume industry for bottling scents, creams, eau de cologne, and in the chemical industry for bottling especially corrosive or radioactive substances. The container in question comprises a main body (1) provided with a power-supply unit (2) connected in series to an electrical circuit with a chip (3) and diaphragm (4). The container is provided with a cork (5) and the diaphragm is provided with a protective cap (6). The chip (3) is provided with a sensor (7). When the container is opened, the chip (3), with the aid of the power unit (2) and diaphragm (4), produces an acoustic accompanying signal.



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Description

The present invention relates to the field of the liquid materials packing and can be used in the production of the containers for capping wine and vodka products, champagne, juices, in the perfumery industry for capping perfumes, creams, eau-de-Cologne, in the chemical industry for capping high-corrosive and radioactive materials.

As prototype was selected container (Author certificate USSR No. 1443793, Int.Cl. B 65 D 1/02) comprising a body and a plug. Such container can provide high-level air-tightness, but it can not, for example, warning with a sound signal the human which is opening container with a very-corrosive material, it can not play a popular melody when champagne is opening etc. In other words, such container does not provide a large functional possibilities.

The object of the present invention to expand the functional capabilities.

The mentioned object is reached by the container comprising a body with a power supply unit, connected in serial electric circuit with a chip and a membrane, and a plug.

The feature of the first variant of the proposed container is that the power supply unit, the chip and the membrane are installed one above other and placed within the plug, and the chip is placed between the power supply unit and the membrane, and the membrane has a protecting cap, and the chip has a transducer. The transducer is realised in form of breaked electric circuit, in the break of which a spring-loaded contact is installed. The transducer is realised in form of pressure transducer and it is installed in the interior space of the plug. The pressure transducer is placed behind a flexible hermetic partition. The membrane is used as a transducer, and the chip turning-on is adjusted on the characteristic sound of the container opening. The pressure transducer is installed on the exterior side of the plug, above membrane. The transducer is realised as an acceleration transducer.

The feature second variant of invention is that the power supply unit, the chip and the membrane are installed within the container placed on the side surface of the body, realised, for instance, in form of anniversary stamp. The chip has a transducer comprising a breaked electric circuit with spring-loaded contact, and between electric conductor plates of the spring-loaded contact a dielectric plate is placed, mechanically connected with the plug. The dielectric plate can be mechanically connected with the muselière as well.

In the third variant of the invention the power supply unit, the chip and the membrane are installed within a container placed into the concave bottom of the body, the container has a protecting cap, realised as an audio amplifier, and the chip has a transducer in form of electric circuit, placed on the joint of the body and the plug.

The first variant of the invention is explained on the fig. 1-6.

- Fig.1 - The part of the body (the neck) with a polyethylenic plug.
- Fig.2 - The part of the body with a cork plug.
- Fig.3 - The transducer in form of breaked electric circuit.
- Fig.4 - The part of the body with the transducer installed inside of plug.
- Fig.5 - The part of the body with the plug having flexible partition.
- Fig.6 - The part of the body with the transducer installed on the external side of the plug.

The second variant of the invention is explained on the fig. 7-9.

- Fig.7 - Side view of the container (bottle) body.
- Fig.8 - Front view of the container body.
- Fig.9 - The part of the body with the dielectric plate mechanically connected with the muselière.

The third variant of the invention is explained on the fig. 10.

- Fig.10 - The part of the body with the container, installed into the concave bottom of the body.

The container comprising a body 1 with a power supply unit 2, connected in serial electric circuit with a chip 3 and a membrane 4, and a plug 5 (see fig.1). The power supply unit 2, the chip 3 and the membrane 4 are installed one above other and placed within plug 5, and the chip 3 is placed between power supply unit 2 and membrane 4, and the membrane has a protecting cap 6, and the chip 3 has a transducer 7 (see fig.2).

The transducer 7 is realised in form of breaked electric circuit, in the break of which a spring-loaded contact 8 is installed (see fig.3). The break of the electric circuit is placed within a dielectric tube 9. One of the contacts is realised in form of needle 10, and the other is realised in form of cylinder 11, within of which is fixed a spring with insulation cover. The function of this spring can be replaced by a rubber. The spring 12 is fixed on the face of the dielectric tube 9. The other side of the metallic cylinder 11 has a thread 13 which is bonded with the body 1 or is interweaved with a muselière (if the container is a champagne bottle) providing no contact between needle 10 and cylinder 11 when the plug 5 is closed.

The spring-loaded contact can be realised based on other principals, but it has to perform its main function - shorting the contact when the container is opened. The transducer can be realised as pressure transducer 7 and installed in the interior space of the plug 5 (see

fig. 4) and, in particular case, can be installed behind a flexible hermetic partition 14 (see fig. 5). The membrane 4 is used as a transducer, and the chip turning-on is adjusted on the characteristic sound of the container opening. The pressure transducer 7 can be installed on the exterior side of the plug (see fig. 6) above the membrane 4. The plug 5 is fixed on the body 1 by the muselière 15.

In the second variant of the present invention the power supply unit 2, the chip 3 and the membrane 4 are installed within container 16 (see fig. 7 - side view) placed on the side-surface of the body 1. The container 16 can be realised, for instance, in form of anniversary stamp (medal, medallion, tally etc.). On production, a mounting tape 17 can be installed in the body of the container 16, which allows to fix it on the side surface (fig. 8 - front view).

The chip 3 has a transducer 7 in form of breaked electric circuit with a spring-loaded contact 8, and between electric conductivity plates 18 of the spring-loaded contact 8 a dielectric plate 19 is placed, mechanically connected with the plug 5. The dielectric plate 19 can be mechanically connected with the muselière 15 as well.

In the third variant of the invention, the container 16 is placed within the concave bottom of the body 1, (see fig. 10) the container 16 has a protecting cap 6, realised as an audio amplifier, and the chip 3 has a transducer 7 in form of electric circuit, placed on the joint of the body 1 and the plug 5. The electric circuit 20 goes to the joint of the body 1 and the plug 5, and the orifice 21 in the protecting cap 6 amplifies the sound.

The present device works in the followed mode. In the first variant of the present invention, when the container is opened, the transducer 7 operates and the chip 3 using power supply unit 3 and membrane 5 provides a sound accompaniment (a melody when the champagne bottle is opened, warning sound when the container with a high corrosive substance is opened). The location of the membrane 4 on the exterior side provides a louder sound accompaniment, and the location of the chip 3 between power supply unit 2 and the membrane 4, one above other, provides a supplementary protection of the chip 3 and allows to produce the article more compact, in particularly to place it within the plug 5 or within a small container 16. The presence of the protecting cap 6 allows to avoid the mechanical damage of the membrane 4 during transportation, loading etc.

The utilisation of the mass-produced chip 3 becomes possible by using breaked electric circuit, shorted by the spring-loaded contact 8 (see fig. 8). The activation of the spring-loaded contact 8 can take place when the thread 13 is mechanically separated from the body 1. In this case, the spring (rubber) 12 connects the needle 10 with the metallic cylinder 11 and the sound accompaniment is turned on. The utilisation of the pressure transducer is expedient in case of champagne bottle opening. An abrupt pressure change during the bottle opening turns on the chip 3 and the membrane 4

provides sound accompaniment. The activation of the pressure transducer 7 can take place on sharp braking of the champagne bottle plug, for instance on its hit to ceiling. In this case, the pressure transducer 7 is installed on the exterior side, above the membrane 4 (see fig. 6). The activation of the pressure transducer 7 is not always possible because the plug 5 flying out from the bottle is usually rotating, so in this case is better to use an acceleration transducer, which can be installed in any part of the plug and activates as on flying out of the plug from the neck of the bottle, as on its sharp braking.

The second variant of the invention is activated on taking off of the muselière 15 or plug 5 and pulling out of the dielectric plate 19. During this, the conductor plates 18 of the spring-loaded contact 8 are connected and the sound accompaniment is turned on.

In the third variant of the invention when the plug 5 is taking off the electric circuit 7 installed on the joint of the body 1 and plug 5 is break, the chip 3 is activated and the turning on of the membrane 4 provides the sound accompaniment. If the container 16 is installed within concave bottom of the bottle body 1, and the bottle is standing on the table, the audio signal is very attenuated. In this case the protecting cap 6 is realised in form of audio amplifier. In this variant of the invention the chip 3 is programmed for turning on from the breaking of the transducer 7 in form of electric circuit.

Claims

1. A container comprising a body with a power supply unit, connected in serial electric circuit with a chip and a membrane, and a plug, wherein, to expand the functional possibilities, the power supply unit, the chip and the membrane are installed one above other and placed within the plug, and the chip is placed between the power supply unit and the membrane, and the membrane has a protecting cap, and the chip has a transducer.
2. The container of claim 1 wherein the transducer is realised in form of breaked electric circuit, in the break of which a spring-loaded contact is installed.
3. The container of claim 1 wherein the transducer is realised in form of pressure transducer and is installed in interior space of plug.
4. The container of claim 3 further the pressure transducer is placed behind a flexible hermetic partition.
5. The container of claim 1 wherein the membrane is used as a transducer, and the chip turning-on is adjusted on the characteristic sound of the container opening.
6. The container of claim 1 wherein the pressure transducer is installed on the exterior side of plug

above membrane.

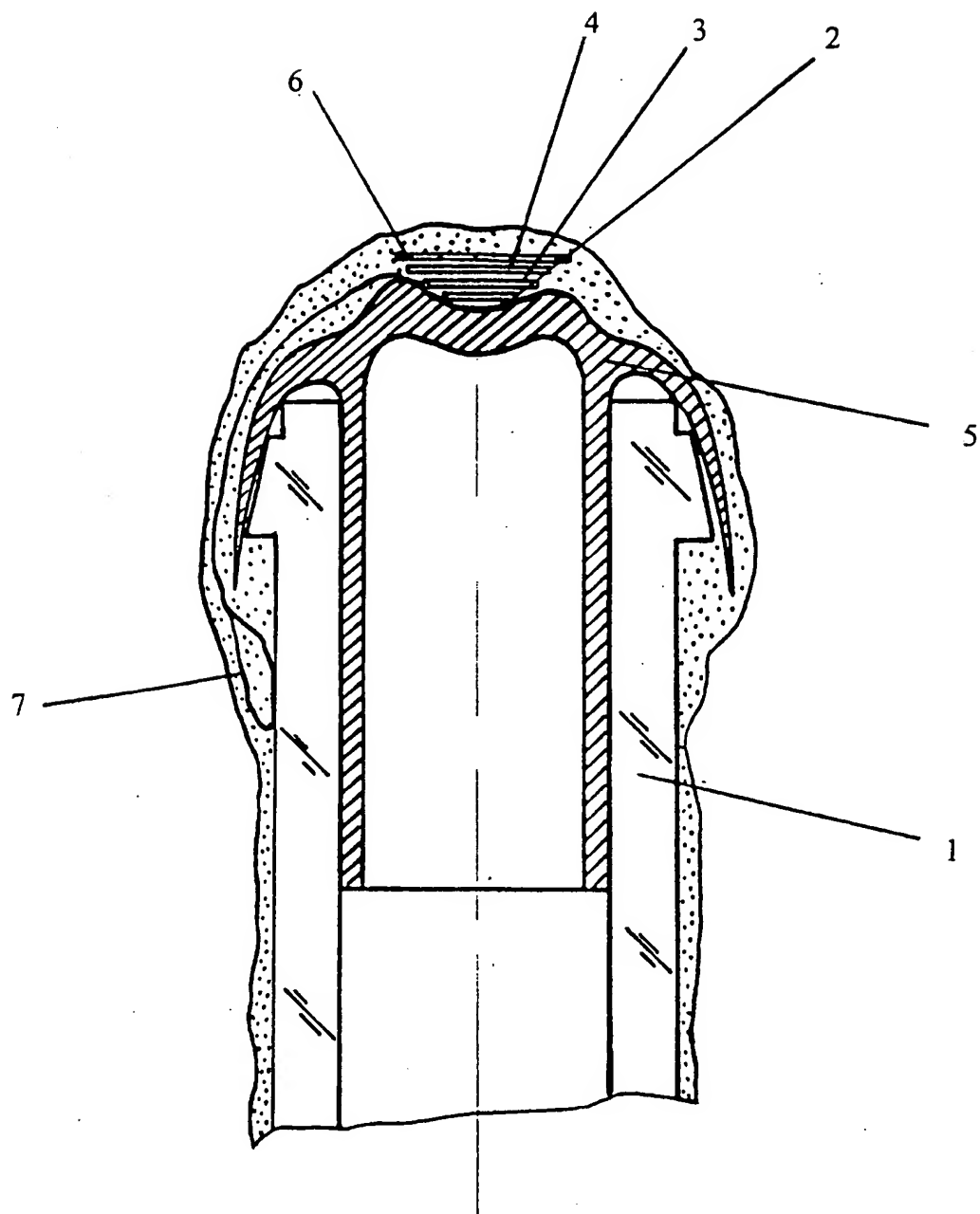
7. The container of claim 1 wherein the transducer is realised in form of acceleration transducer. 5
8. A container comprising a body with a power supply unit, connected in serial electric circuit with a chip and a membrane, and a plug with a muselière, wherein, to expand the functional possibilities, a container is installed on the side surface of the body, and the power supply unit, the chip and the membrane are installed within container. The chip has a transducer comprising a breaked electric circuit with spring-loaded contact, and between electric conductivity plates of the spring-loaded contact a dielectric plate is placed, mechanically connected with the plug. 10 15
9. The container of claim 8 further the dielectric plate is mechanically connected with the muselière. 20
10. The container of claim 8 further the container is realised in form of anniversary stamp.
11. A container comprising a body with a power supply unit, connected in serial electric circuit with a chip and a membrane, and a plug, wherein, to expand the functional possibilities, the power supply unit, the chip and the membrane are installed within the concave bottom of the body, and container has a protecting cap, realised in form of an audio amplifier, and the chip has a transducer in form of electric circuit, placed on the joint of the body and the plug. 25 30 35

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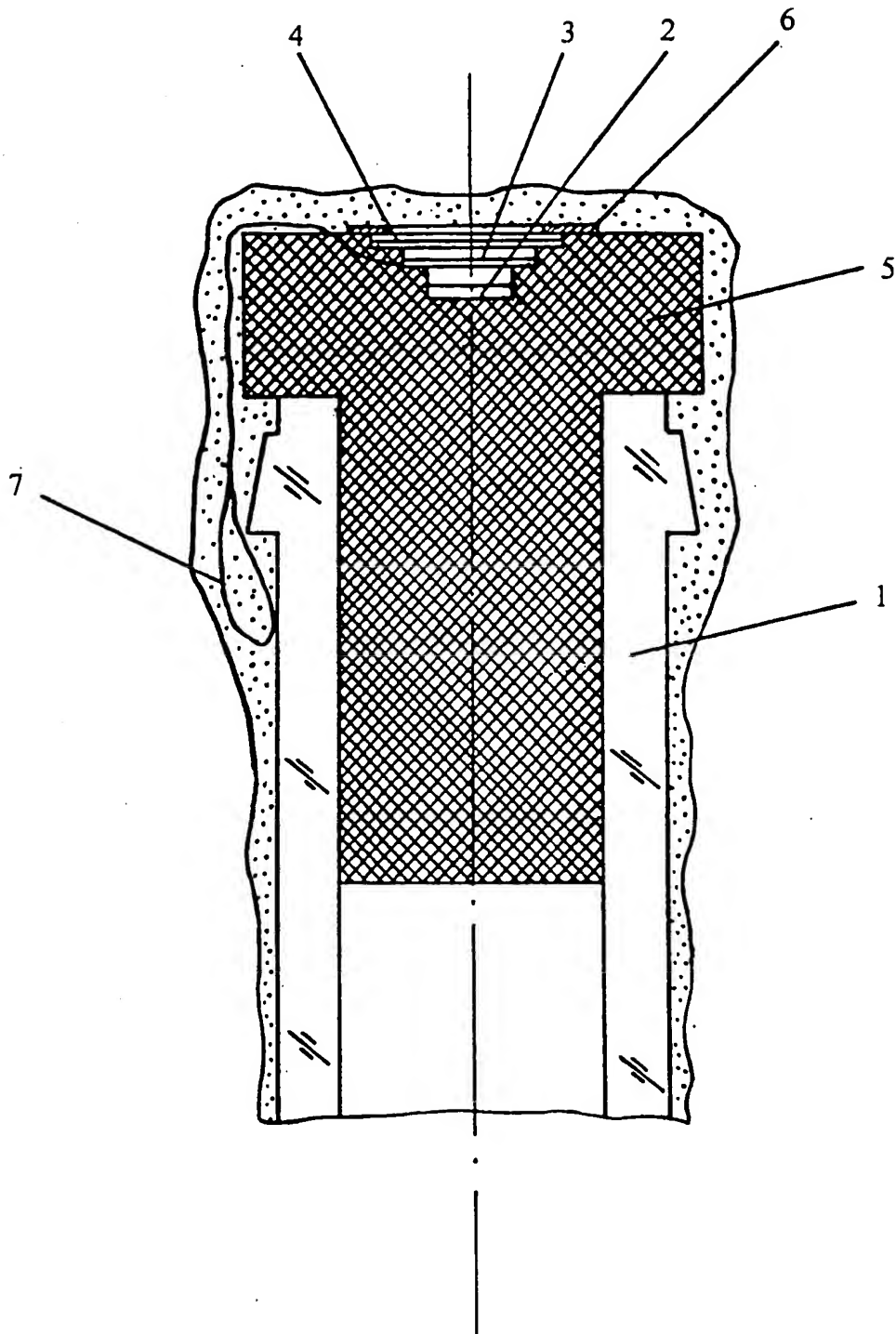
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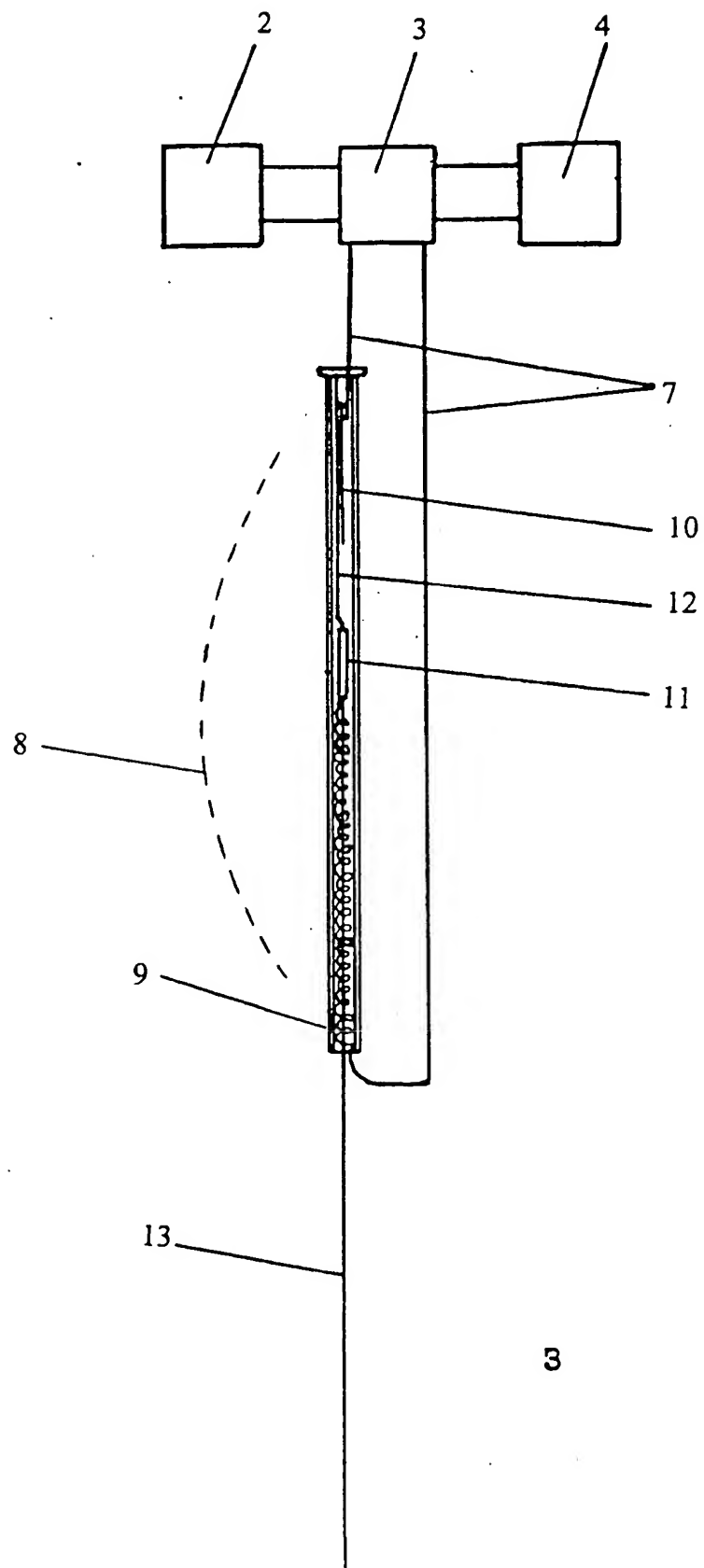
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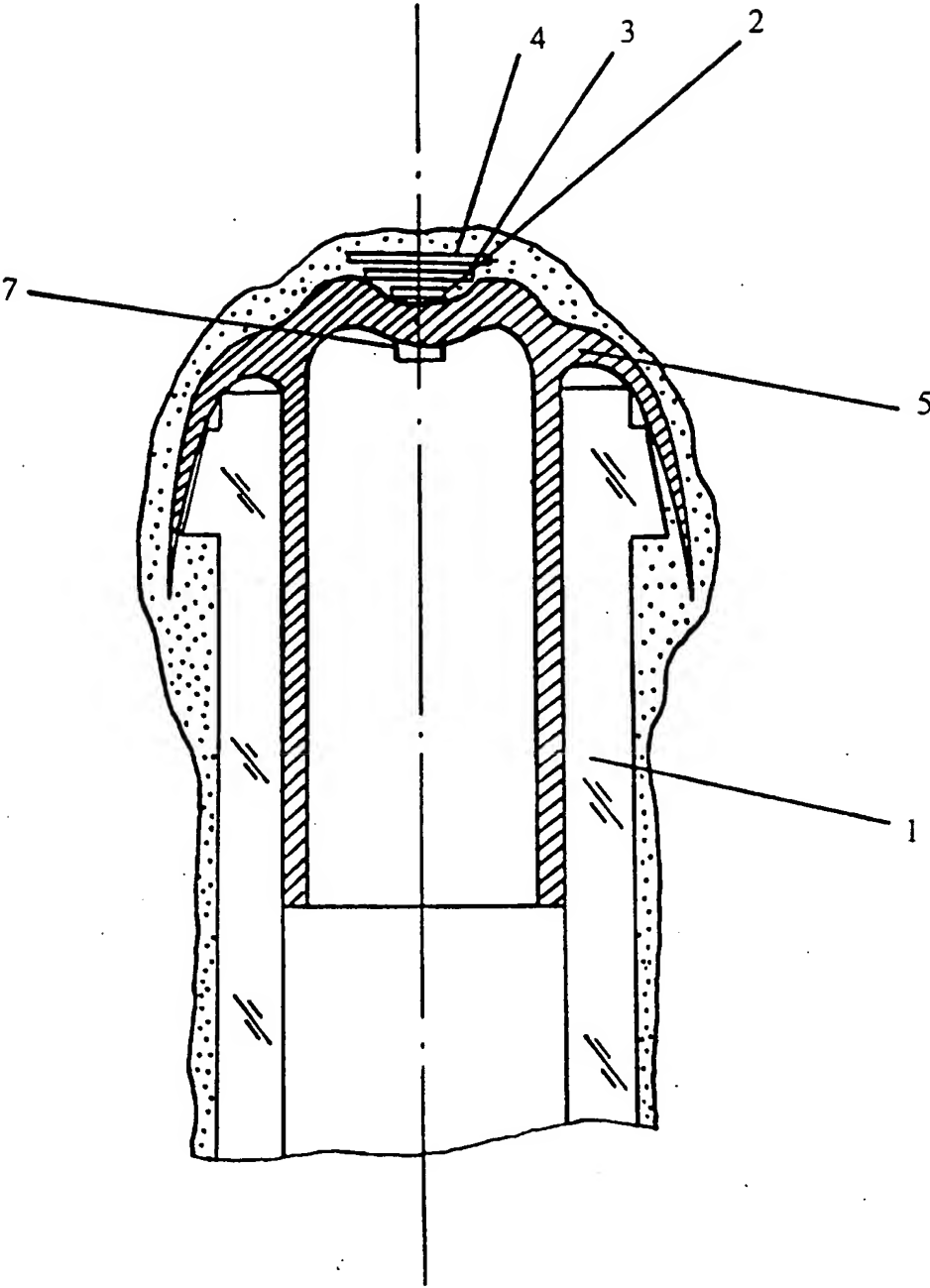
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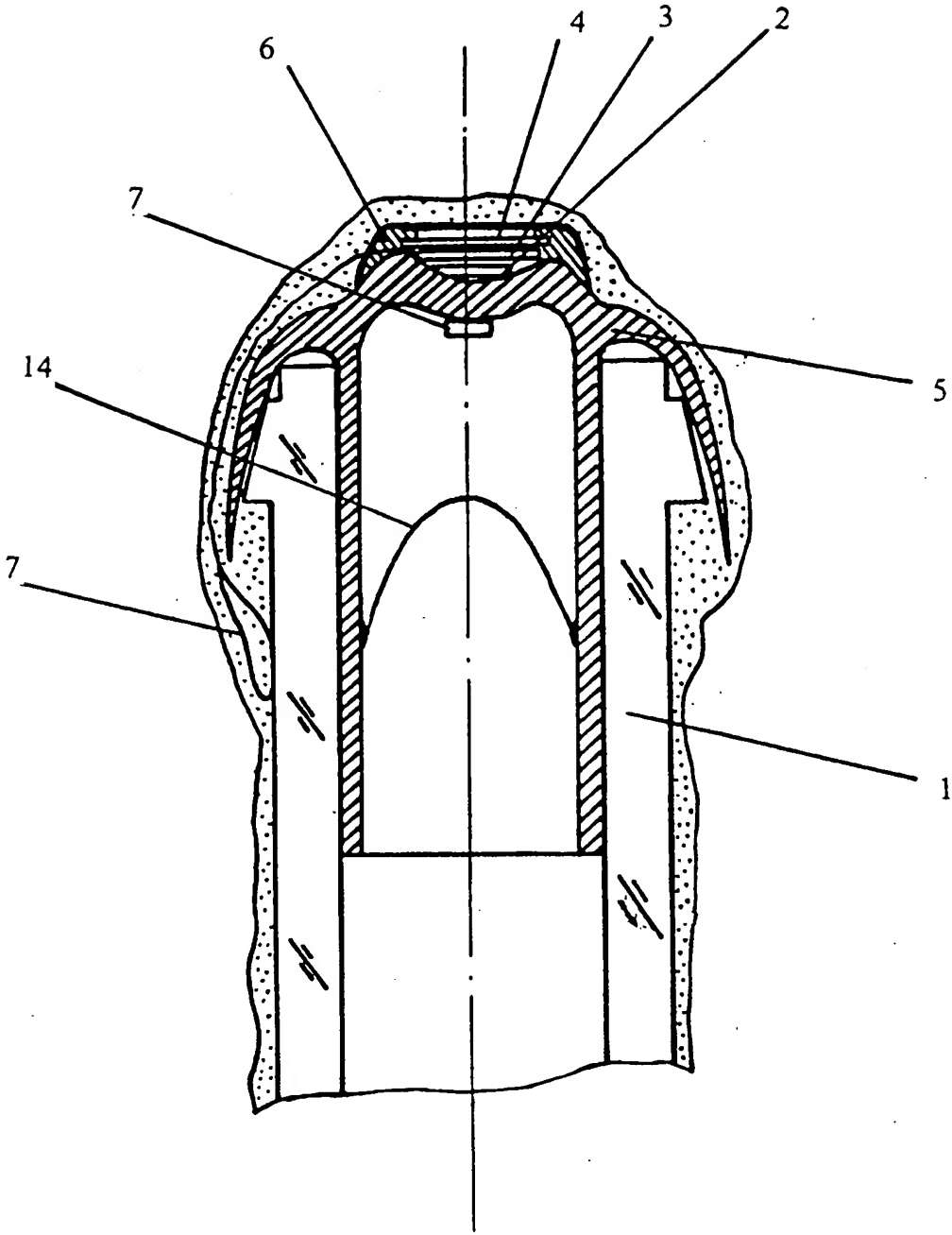


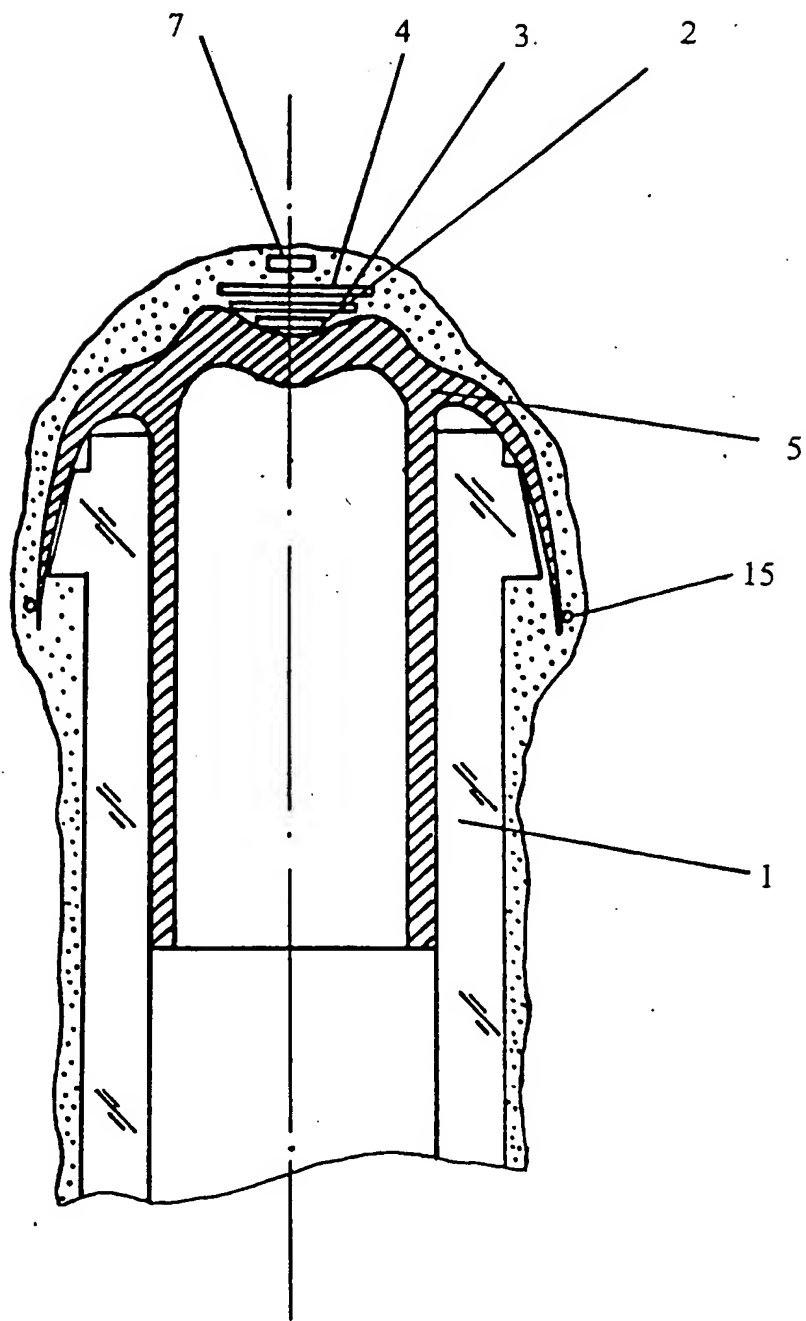
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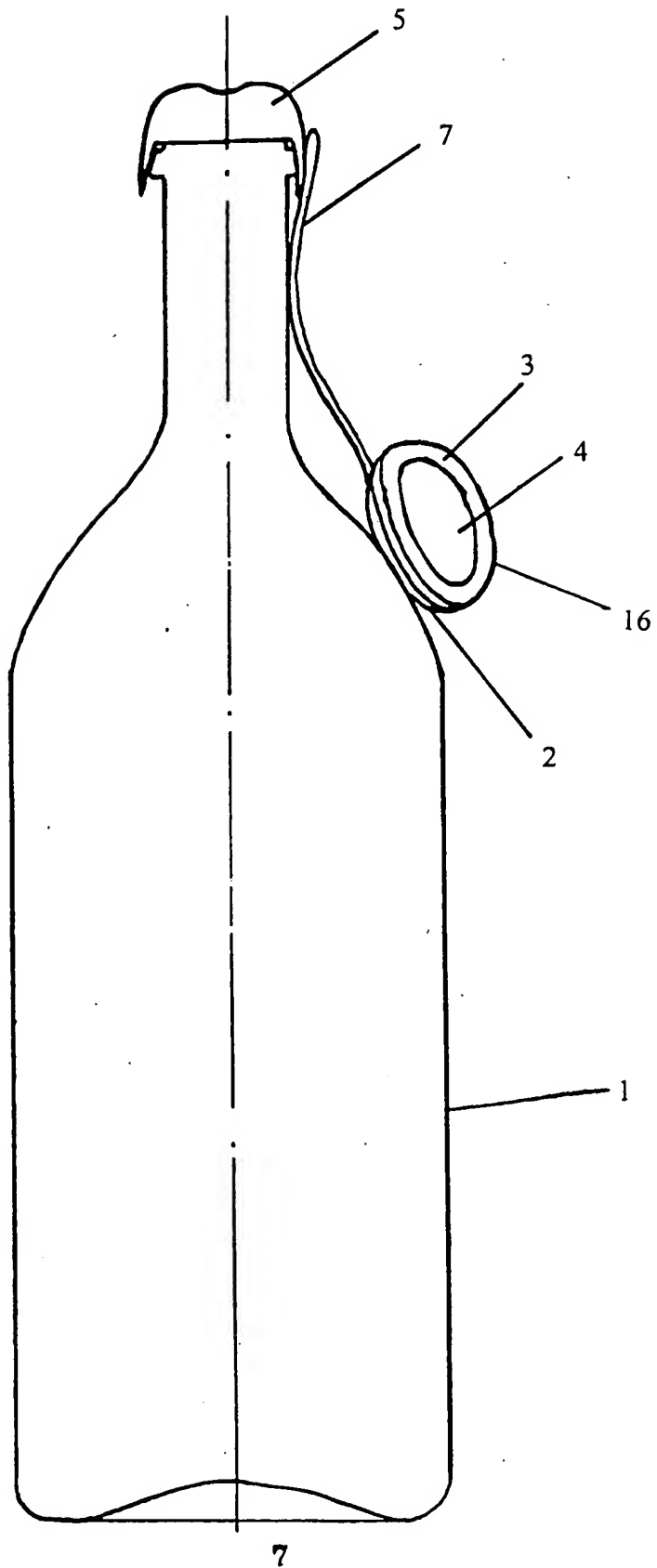


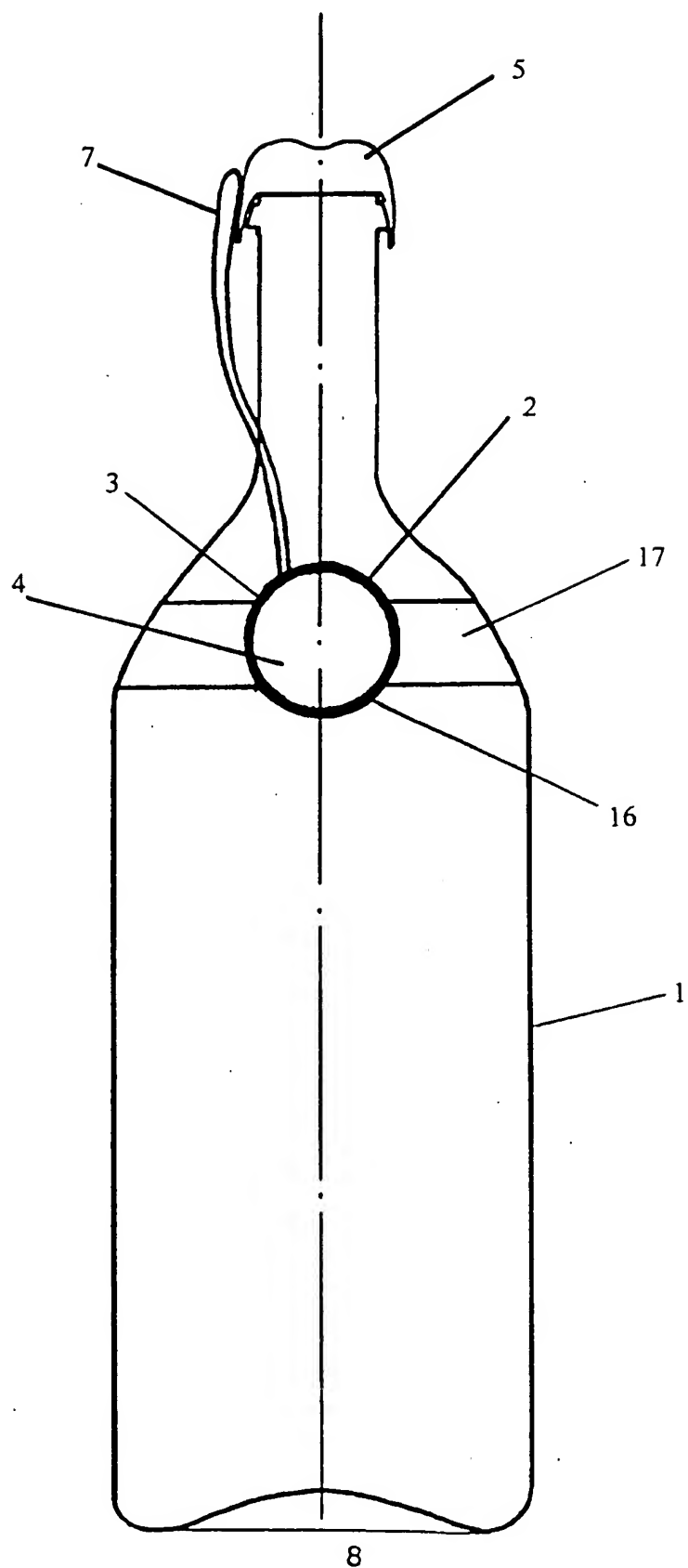


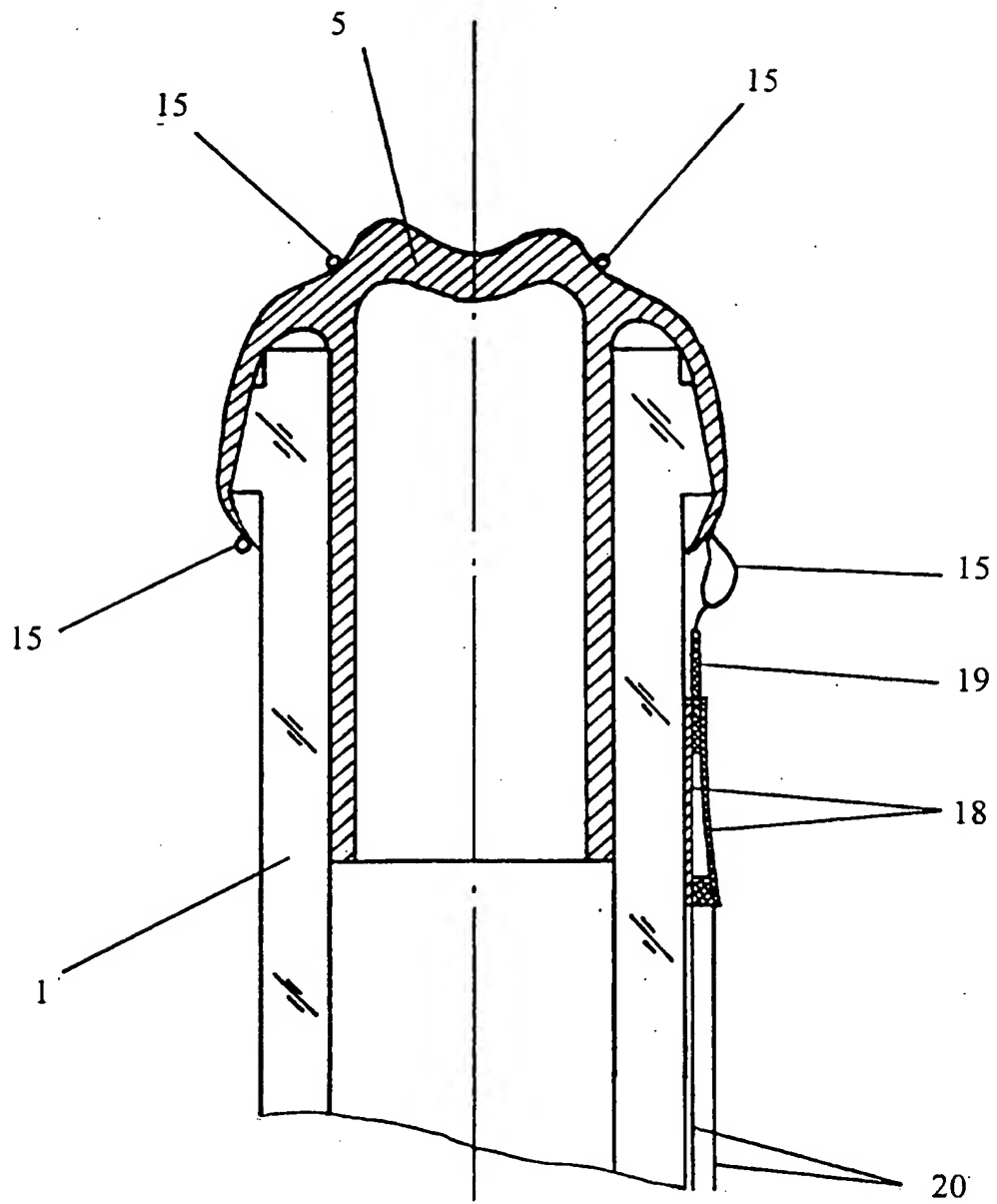


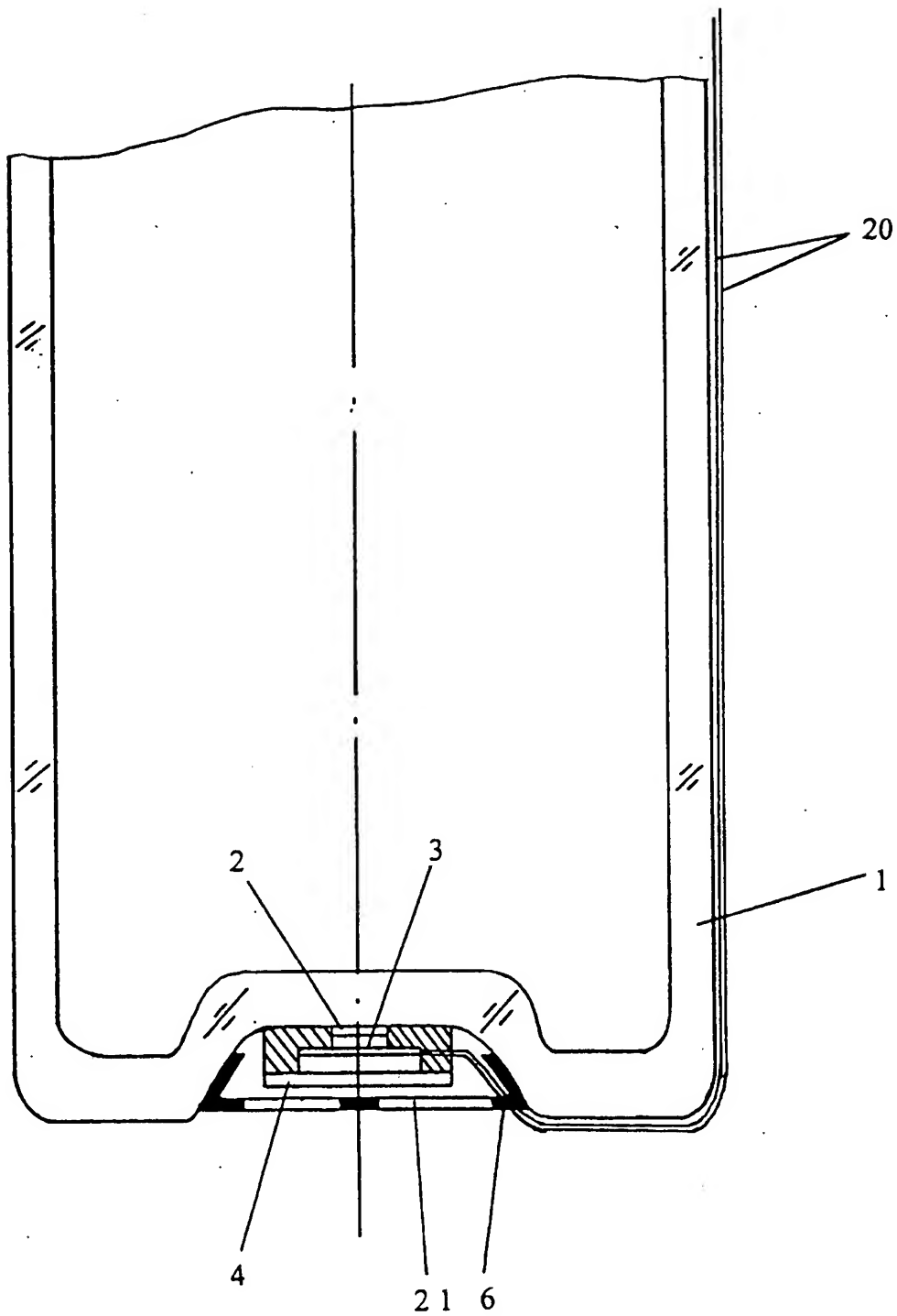












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INTERNATIONAL SEARCH REPORT

International application No.

PCT/MD 96/00002

A. CLASSIFICATION OF SUBJECT MATTER

IPC6 : B67B 1/00, B65D 1/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6 : B67B 1/00, B65D 1/02, 39/00, 41/34, 41/48

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 4474302 (JAMES R. GOLDBERG), 2 October 1984 (02.10.84)	1-10
A	FR, A1, 2628064 (ARNOUX-VOSINE), 8 September 1989 (08.09.89)	1-11
A	FR, A1, 2667576 (PELLET JEAN PIERRE), 10 April 1992 (10.04.92)	1-11
A	DE, A, 1293621 (MARCEL HENRI LYON), 24 April 1969 (24.04.69)	8-10

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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Date of the actual completion of the international search

4 April 1996 (04.04.96)

Date of mailing of the international search report

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